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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,435	12/07/2001	Richard Edward Collins	72523	5499

22242 7590 11/20/2003

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EXAMINER	
ROSSI, JESSICA	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 11/20/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

C100

Office Action Summary	Application No.	Applicant(s)	
	10/010,435	COLLINS, RICHARD EDWARD	
	Examiner	Art Unit	
	Jessica L. Rossi	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/2/03, Election*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *9 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 10-12* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I and Species A within that group (claims 1-8 and 10-12) in Paper No. 5 is acknowledged. Claims 9 and 13 are withdrawn from further consideration.

The traversal is on the ground(s) that there would be a large degree of overlap in the examiner's search and therefore all the claims should be examined together. This is not found persuasive because as set forth in the previous office action dated 8/29/03, with respect to the method and product claims, the glass panel can be made by another and materially different process such as one where the glass sheets are placed in spaced-apart confronting relationship before any heating takes place (see MPEP 806.05(f)).

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The information disclosure statement filed 5/13/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. Specifically, the IDS lists the International Search Report for PCT/AU00/00637 but does not provide a copy of the search report or a copy of the references listed therein. Therefore, the information referred to in the search report has not been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 7-8, and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibuya et al. (US 4269617).

With respect to claim 1, Shibuya is directed to a method of constructing a glass panel (liquid crystal display - LCD) comprising two edge-sealed glass sheets 1, 2 (Figure 1; column 1, line 6). The reference teaches providing a solder glass band 8 around a margin of one surface of **each** glass sheet (**column 7, lines 53-56**) and forming a hermetic bond between the solder glass and the surface of each sheet by heating to a first firing temperature (Figure 1; column 3, lines 55-68; column 6, line 68 – column 7, line 1; column 7, lines 55-56). The reference teaches positioning the glass sheets in spaced-apart confronting relationship (column 4, lines 27-29; column 7, lines 58-59) and forming a hermetic seal between the two solder glass bands by heating to a second firing temperature (column 4, lines 31-34; column 7, lines 10-11 and 60-61), which is lower than the first temperature (column 4, lines 42-46), while maintaining the spaced-apart relationship between the sheets (note spacers 3, 3' embedded within fused solder 4, 4' in Figure 1).

Although the reference does not specifically state that annealing of the glass sheets is avoided while heating to the second temperature, the skilled artisan would have appreciated that annealing would not take place during this second heating step since the reference is only heating

to about 400°C for a time period of 15-45 minutes (column 7, lines 10-11; column 5, lines 11-17); it being noted that the present invention discloses heating the glass sheets up to 440°C for a time period of about 1 hour (p. 6, lines 19-23) during the second heating step without annealing the glass sheets.

Regarding claim 2, Shibuya teaches fusing the two solder glass bands together to form a hermetic bond directly between them (Figure 1; note spacers 3, 3' embedded within fused solder glass).

Regarding claim 7, Shibuya teaches providing the solder glass bands by depositing a liquid paste comprising solder glass powder (column 1, lines 46-48; column 4, line 64 – column 5, line 10; column 6, lines 63-64).

Regarding claim 8, Shibuya teaches depositing the solder glass by screen printing (column 6, lines 63-64).

Regarding claim 10, Shibuya does not expressly state that a spacing between the glass sheets changes during forming of the hermetic seal between the glass bands. However, the skilled artisan would have appreciated that during formation of the hermetic seal, the solder glass bands melt thereby allowing them to fuse to each other and encapsulate the spacers within (Figure 1). The skilled artisan would also have appreciated that the thickness of the glass bands placed on each glass sheet prior to formation of the hermetic seal would have to decrease somewhat during this melting, fusing, and encapsulating; therefore, the spacing between each glass sheet and the spacers upon which they rest would have to decrease, thereby resulting in a decreased spacing between the glass sheets.

Regarding claim 11, Shibuya teaches the glass sheets being flat (Figure 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya et al. and further in view of the collective teachings of Miller et al. (US 5867238) and Gunjima et al. (US 4834509).

Regarding claim 4, Applicants are directed to paragraph 4 above for a complete discussion of Shibuya. Shibuya is silent as to tempering at least one of the glass sheets during the first heating step.

It is known in the art to form an LCD comprising tempered glass sheets, as taught by the collective teachings of Miller (column 13, lines 25-26) and Gunjima (column 9, lines 30-46). Therefore, it would have been obvious to the skilled artisan at the time the invention was made to use at least one tempered glass sheet for the LCD of Shibuya because such is known in the art, as taught by the collective teachings of Miller and Gunjima, wherein tempered glass would increase the durability and strength of the LCD.

Since Shibuya teaches heating each glass sheet to a first temperature of about 430°C for about 15-45 minutes (column 6, line 68 – column 7, line 1), which is consistent with the temperatures and times at which glass is tempered (note present invention heats to about 450°C for about 1 hr; p. 6, lines 15-19), it would have been obvious to the skilled artisan at the time the

invention was made to temper at least one of the glass sheets of Shibuya during the first heating step because this eliminates the need for a separate tempering step.

7. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya et al. and further in view of Ogura et al. (US 5535030).

Regarding claim 5, Applicants are directed to paragraph 4 above for a complete discussion of Shibuya. The reference teaches spacers 3, 3' maintaining the glass sheets in the spaced apart relationship, but is silent as to the spacers being pillars. Selection of a particular shape for the spacers would have been within purview of the skilled artisan at the time the invention was made. However, it would have been obvious to use pillars because such is known in the LCD art, as taught by Ogura (Figure 1).

Regarding claim 6, Applicants are directed to paragraph 4 above for a complete discussion of Shibuya. Shibuya is silent as to evacuating the space between the sealed glass sheets. It would have been obvious to evacuate the space between the sealed sheets forming the LCD of Shibuya because such is a well known and conventional process step in the LCD art, as taught by Ogura (column 6, lines 2-6), thereby allowing for injection of the liquid crystal display material while avoiding air bubble formation.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya et al. and further in view of Bayer (US 3886014).

Regarding claim 12, Applicants are directed to paragraph 4 above for a complete discussion of Shibuya. Shibuya is silent as to the glass sheets being curved.

Selection of a particular shape for the glass sheets would have been within purview of the skilled artisan depending on the type of product the LCD is to be incorporated into (i.e. watch, tv

screen, etc.). However, it would have been obvious to use curved glass sheets for the LCD of Shibuya because such is known in the art, as taught by Bayer (Figure 11; column 5, lines 1-2 and 6).

Allowable Subject Matter

9. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, the prior art fails to teach or suggest forming the hermetic seal between the two solder glass bands by interposing solder glass between the two solder glass bands and fusing the solder glass with the two solder glass bands.

US 6336984 to Aggas teaches all of the limitations of present claim 3 (and present claims 1, 2, 4-7, 11), but the reference's effective filing date is 9/24/99 (Figures 5-6 and 10-12; column 2, lines 61-68; column 3, lines 1-8; column 6, lines 27-50; column 7, lines 2-38; column 8, lines 7-27). Since the effective filing date of the present invention is 6/10/99 (note certified copy of foreign priority document in file and in English language), Aggas cannot be used as prior art against the present claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **703-305-5419** (571-272-1223 come mid December). The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jessica L. Rossi
Patent Examiner
Art Unit 1733